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ABSTRACT

There are two types of skills needed to perform well on a standardized achievement test: (1) the cognitive ability or basic skill that the test is designed to measure, and (2) the ability to demonstrate that cognitive ability or basic skill within the test situation. Test-taking skills (sometimes referred to as test wiseness) are the skills needed by a child to demonstrate the cognitive ability that the exam is constructed to measure. The first part of this document delineates the skills necessary for a given test. Part II discusses two philosophies regarding the fundamental nature of knowledge--absolute or relative--and the issues of guessing and the "Don't Know" response option. The Metropolitan Achievement Test (MAT) is used as an example. The third section discusses the need for test wiseness and points out that without the required test skills the child cannot demonstrate what has or has not been learned. Part IV presents and discusses practice exercises patterned on the format and item types used in the MAT. The final section, Tips on Discussing Test Wiseness with Children, summarizes the essentials the teacher should know about improving children's test skills. The appendices provide more examples. (RC)

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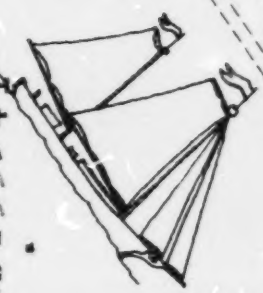

Test taking can be _____

fun easy work hard

book ☐
goat ☐
good ☐
boat ☐

△△ + △ = ☐

3 + ☐ = 5

TEST-TAKING SKILLS

by

DARRELL SABERS

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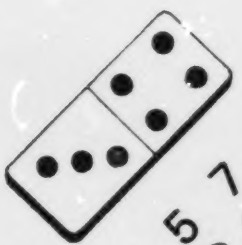

Why did Ida Myers bake a pie?

- ○ For her husband's lunch.
- ○ For a baking contest.
- ○ To put whipped cream on.
- ○ DK

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TEST-TAKING SKILLS

by

Darrell Sabers

June, 1975

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PREFACE

This report could have been titled "All You Need to Know About Test-Taking Skills -- Because Someone Asked."

The first people to ask me about test-taking skills for children were those who were planning the summer workshops for the Tucson Early Education Model (TEEM), Arizona Center for Educational Research and Development. Then there were requests from field representatives to conduct workshops for teachers and consultation sessions with program assistants in the communities. The input from all who have participated in those sessions has resulted in a much different document than I would have written a year ago.

The objectives for the workshops on test-taking skills were:

1. Explain why test-taking skills are necessary for children.
2. Identify academic and test-taking skills necessary for a given test.
3. Make an exercise practicing a test-taking skill within the context of an academic skill.

After a presentation of research findings and opinions concerning test-taking skills, the workshops provided for the application of those skills to the teacher's classroom as follows:

Strategy: Work in pairs or as a grade level group.

Directions: Choose a situation to work through using materials you would actually use in your classroom; examples: song, recipe, cooking experience, intellectual kit, spelling, word bank, creative writing.

Apply: 1. Discuss possible test-taking skills relating to the situation.

2. Identify at least three skills that could be practiced as exercises in a TEEM interest center.

3. For later sharing, record and develop:
   a. Identity of a (some) test-taking skill(s) to be developed/reinforced.
   b. Invitation written for children, for the activity.
   c. Description of materials and methods to be used.
   d. List of possible extensions.

The present report is the result of the discussions during and after those training sessions. The report presents research findings and opinions intertwined. Although no documentation is provided with each statement in the report, the references do substantiate many conclusions. I do not apologize, however, for holding a strong opinion on a matter of which I have no proof as long as there is no way my approach can hurt a child.

Tips on Discussing Test Wiseness (TW) with Children summarizes the essentials the teacher should know about improving children's test skills. This part should be read and reread.

I owe special thanks to Nori Wagner who helped plan the workshops and ensured their success; to Nori, Jan Burrus and Sandy Voll for their help in getting community reactions and feedback; to Jane Hedger and her First Graders in Clinton School, Lincoln, Nebraska, for stories and suggested items in the practice exercises; and to all those who participated in the sessions and provided feedback. Although I share the credit for anything worthwhile you may find here, I take sole responsibility for the opinions expressed.

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INTRODUCTION

The need for this report is based on two assumptions:

1. Some day each child in your classroom will be "tested" for some reason and an important decision will be based on that outcome.
2. The person who improves in ability to "take" exams is likely to improve her/his score on the test. (Stated another way, those who can do it exceed those who can't.)

The first assumption does not mean school testing only. Perhaps the important test is one to determine who gets the desired position in business, the chosen specialty in the service, admission to the "right" school, a civil service rating, or a prerequisite course waived. The second assumption can hardly be questioned.

Test-taking skills are necessary for TEEM children to demonstrate what they have learned. Whether we approve or not, standardized tests will continue to be used to evaluate school programs. The norms for standardized tests are derived from groups of students who have many of the requisite test-taking skills. If the TEEM children try to "compete" without the requisite skills, their performance will appear deceivingly low.

It is not my position to argue for continued use of standardized tests. I believe they are inevitable. What we must do is prepare our children so that they can perform as well as their ability allows and not be hampered by unfamiliarity with the requisite test skills.

There are two types of skills needed to perform well on a standardized achievement test: (1) the cognitive ability or basic skill that the test is designed to measure, and (2) the ability to demonstrate that cognitive ability or basic skill within the test situation. Test-taking skills are the skills needed by a child to demonstrate the

cognitive ability that the exam is constructed to measure. We are not talking about teaching the content of the tests, but the ability to demonstrate the knowledge already possessed. We do not teach tests, but how to take tests. Some writers refer to this ability as Test Wiseness (TW).

PART I: The Test-Taking Skills

The test-taking skills necessary for a given test are easy to identify and readily learned. A study (Pike, 1973) conducted with TEEM children has provided evidence of the effectiveness of efforts directed at test-taking skills problem areas.

The test-taking skills identified in that study were:

1. Filling in an oval shaped space with a pencil.
2. Filling in only one such space per test item.[1]
3. Filling an oval shaped space under the picture of an object.
4. Filling in ("marking") the space under only one object when presented with three objects per test item.
5. Marking the space beside the word that identifies the picture of an object.
6. Marking the space beside the word that identifies a pictured object given four response options (words).
7. Marking the space beside a dictated word given four response options but no pictured object.
8. Drawing a ring around several pictured objects.
9. Writing a number in a box (square).
10. Writing the number of several pictured objects in a box.
11. Following the left-to-right and top-to-bottom test item sequencing format.

The above skills may seem so elementary that they do not deserve special consideration in the classroom. However, it was found that instruction and practice in those skills significantly improved children's test scores in grades 1 and 2. Third graders had already

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[1] In Metropolitan Readiness Test more than one space is required for some items.

sufficiently mastered the skills so that no improvement resulted from those exercises.

Practice exercises for the identified skills are presented in the summary report of that research (Pike, 1973). Additional exercises presented with the present report are intended to extend the test-taking skills instruction to regular classroom activities.

Additional test skills that TEEM children need to acquire include:

12. Listening to and following directions. Ability to follow directions is often made more important because directions are given in English.
13. Finding identifiers and keeping in sequence with the teacher during dictated portions of the tests.
14. Working independently on a timed task for the duration of the time required.
15. Treating test items independently of personal experience when the keyed answer is dependent only on presented information.
16. Completing the task in the allotted time.
17. Marking an answer even when not certain it is correct.

The test wise student handles these tasks so easily they are often taken for granted. However, many children learn (and rightly so) that important and useful sources of correct answers are abundant in the classroom (yet on a test, it is not permissible to ask or seek answers). Some children are taught to make certain their answer is correct (yet on a test they must pick a "best choice" and proceed). Only in a test setting is time at such a premium that one task becomes so important all other things and people must be ignored. In a language experience approach to learning, children learn to relate what they read to their real life situation (yet on a test they must answer within the context of a prescribed setting). Examples of those conflicts are readily seen in testing young children.

Perhaps the most important of all test-taking skills is the requirement that a child make a choice for each item on the test. This is different from many learning situations where omitting or procrastinating is permissible. This requirement is the most controversial issue with regard to the Metropolitan Achievement Tests (MAT) and is discussed extensively in Part II of the present report.

PART II: Philosophy of Knowledge Tested

There are two philosophies regarding the fundamental nature of knowledge. One approach is that knowledge is of an absolute nature, and the student either knows or does not know an answer. The other approach contends that knowledge is of a relative nature, and that the student should be expected to make relative judgments about the probabilities of correctness. The first contends that if the student is not certain she/he should not "guess," whereas the second contends that all the student can do is choose the most probable keyed answer.

The Metropolitan Achievement Test is based on the former philosophy, and the inclusion of DK (or ? in the Primer) for the Don't Know response is an effort to keep students from guessing when the correct answer is not known. The use of the DK options is not recommended by many test experts,[2] yet it appears often in the MAT, the most widely used test battery in America.

The reason that the second philosophy has more proponents is due to the difficulty of defining how certain one must be to be "sure" of something. Many concepts we are sure of are incorrect, and seldom is an intelligent person 100 percent certain of anything.[3]

The teacher who believes in absolute knowledge is asked to take the Metropolitan Reading Test, Elementary Level, and defend her/his

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[2]As early as 1966, and again in 1974, the Joint Committee of the American Psychological Association, American Educational Research Association, and the National Council on Measurement in Education has deemed it essential that the examinees be given the strategy to maximize her/his test score.

[3]I love to use as an example the fact that I do not know for certain what my own name is. My mother always spelled it Darrell Lee, the same way I spell it and the way it appears on my Social Security card. However, the Monsignor who baptized me christened me Darrell Leo to give me a patron saint. Then the clerk at the courthouse put Darrel Lee on my birth certificate. To top if off, Santa used to leave gifts for Daryl, and I always claimed them. Now how can a person who doesn't know his own name ask a child to mark DK (Don't Know) whenever she/he is unsure of a response?

answers on all the items. Teachers have been surprised at how often the right answer is a matter of opinion. The MAT does not use DK as a response to those reading items, but the instructions do not tell the student to mark an answer even if uncertain of the correctness of the response.

Unfortunately, the use of the DK response is not an issue on which one can remain neutral. The issue cannot be ignored. I have a test before me where a student marked 31 of 40 responses DK (Test 5, Elementary Level, MAT). The student marked 8 correct and misunderstood the directions to item 2, where the 6 + ☐ = 9 confused him (this is discussed again later). There is no way his score of 8 is comparable to another's score of 8 when the second student guessed at many items.

Some teachers instruct their students to ignore the DK distractor. In fact, we have evidence that some teachers in the standardization sample told their students to never mark DK (Findley, 1965). The following example will show how this affects MAT norms.

Fictitious Data-Hypothetical Example

Suppose the 40-item test just mentioned was given to two groups, both having the same degree of knowledge. The difference between Group A and Group B below is only that Group A does not use DK when uncertain.

	Group A	Group B	
Items known and marked right	12	12	
Items "known" but marked wrong	4	4	
Items guessed correct	6	0	Students in Group B use DK and do not guess
Items guessed wrong	18	0	
Items marked DK	0	24	
Average Score	18	12	
Percentile Rank	38	26	

The difference in Percentile Rank is 12 points due only to Group A students' willingness to mark a choice when not certain. Perhaps there are no groups as different as the two used in this example, but there are individuals more extreme. There is no fair way to compare results

when some students guess and others mark DK.

Now suppose your students take the MAT and are compared to the national norm group which contains both Group A and Group B. If some of your students mark DK and some don't (as is the usual case), your students' performance will look better than Group B but worse than Group A. Because we don't know how many schools like those in Group A were in the norm sample, we don't know how much the norms are affected. Many of us believe few or no schools like those in Group A exist. But the MAT norms are made "harder" to match because schools like those in Group A were included. Schools where children are taught to use DK are at a disadvantage, and schools where children are taught to ignore DK are at an advantage. There is no "in between" area where you can do what is "just right." What I would do is obvious.

PART III: The Need for Test Wiseness

> ... The administrator (of the test) should be sure that the examinee understands the tasks involved in taking the test: what kinds of responses are to be made and on what answer sheets, the implications for test-taking strategy of erasures or multiple marking or guessing,...
>
> *Standards for Educational and Psychological Tests, 1974, p. 65.*

If we want a child to demonstrate how well the goals of instruction have been met, we must allow the child to respond to our questions. Without the required test skills the child cannot demonstrate what has or has not been learned.

Items like number 21 on Test 5 of the Metropolitan Achievement Tests, Primary II (Form F), can be missed due to the way a student marks it. The item is 4 + ☐ = 18, and some children write the answer in the ☐ rather than filling the oval next to 14. This is an example of the type of skill a child should be taught to practice. Many children are exposed to workbooks where the ☐ is used as the place to write in an answer to computation exercises. The MAT Primer (Form H) has an item, 2 + 3 = ☐, where the answer must be written in the ☐. The very next level, MAT Primary II (Form F) has similar items but no credit is given unless the correct oval is marked. Therefore students taught only to fill in the ☐ may score higher on these items in the first grade than in the second when Primary II is used. This indicates the need to provide students with experiences relevant to the particular test format they will encounter. Perhaps at the second grade level the child should be given practice with both the ☐ and the oval in the same exercise.

As I write this I am looking at a Primary II MAT (Math Computation Test) taken by a TEEM second grader. The person who hand-scored this Test Booklet did not notice that whenever there was a ☐ in an item, e.g., 5 - ☐ = 3, he had written the correct number in the

but did not mark the oval. Also, when NG (for Not Given) was the correct answer he always checked DK (for Don't Know). I can count 12 items he did correctly on page 12 alone, yet his score on the test was 6. In fairness to the scorer I will admit the student only marked 6 correctly, but he did know 12.

In the same test on Reading, Part A, Sentences, item 4 shows a picture of a fire station where firemen are painting. The child received no credit for marking "the fireman has the tools for putting out a fire" presumably because no firefighting equipment is pictured. This is where the child must learn to know what the test requires, that he must restrict his answers to the specific situation in the test. This is especially hard in classrooms emphasizing the language experience approach. It could be added, with reference to the item in question, that no sentence is a very good descriptor because the picture shows two firemen painting. But the child must learn to make the "best" guess. Some printings have only one fireman instead of two in the picture for that item, a fact which improves the item but retains the above problem. Item 4 has no "right" response, item 5 has two "right" responses. In each case a "guess" is required.

One example of the need for a child to respond contrary to experience concerns an item regarding an umbrella. The keyed response for the item was to keep dry in the rain, but the Tucson native had only seen umbrellas used to provide shade on a sunny day. One may argue that extrapolating beyond one's own experiences is not merely a test-taking skill, yet it is apparent how the difficulty is increased for the child in the early stages of the language experience approach.

There are tests other than the MAT which have problem areas. In the California Achievement Tests (Level 3) there are directions to "...MAKE SURE YOU HAVE ERASED COMPLETELY THE UNWANTED MARKS FOR ANY ANSWERS THAT YOU CHANGED." When one little 4th grader heard these directions she erased every answer she had recorded in that section - the result would have been a score of zero had a proctor not noticed.

The Iowa Tests of Basic Skills have a very unusual format for testing punctuation and capitalization. Without some practice on

these formats the child has a very difficult time. With practice, the format is understandable and very reasonable.

Experience is needed with time limits and guessing to avoid some obvious mismeasurement. One student worked two-thirds of the problems in a math subtest of the Iowa Tests of Basic Skills and missed only one item. Yet she omitted the other one-third because she was "not completely certain" of her answers. If time was running out, she could have improved her score by blindly guessing, and her score would then have been more comparable to others with the same degree of knowledge but better test skills. Of course, if time were not the problem, she needs only to be taught to answer even though she may be wrong.

The basic recommendation for improving test performance is to make the student more comfortable by eliminating the unknown aspects of the testing situation. Perhaps we want to provide a sporting motto like:

Guess and Go
Miss 'em Quick
Miss with a Smile
Miss 'em and Forget 'em
Choose and Cut Out

The philosophy behind each motto is to see the test situation as a game that must be played or a contest that should be tried. Attempt to do your best but don't worry about mistakes, because worrying about mistakes causes lower scores. A test should be no less fun than a game of checkers or Monopoly when one knows how to play.

PART IV: Use of Practice Exercises

The exercises discussed here and included in Appendix A are patterned on the format and item types used in the MAT. Different problems would be treated if a different test were used as the focus.

Old Ida and Her Pie (Appendix A) is a story written by five TEEM children. The items based on the story follow the format of the MAT, except that Don't Know (DK) is not used in the MAT with these types of items. Because DK is such a problem area it is recommended that children get as much exposure to it as possible before taking the MAT tests (Pike, 1973, p. 17). Of course there would be little need to use that response if the achievement test selected did not have that option.

The items in the *Old Ida and Her Pie* exercise require the student to answer on different cognitive levels. Items 1 and 4 are recall or "look back for the answer" types. Item 2 asks the child to make an inference. One important test-taking skill is the ability to differentiate between literal (factual recall) and inferential questions. We call literal types the "look back for the answer" kind because the answer can usually be found by rereading the passage. Inferential types are different and one reading usually gives as much information as needed to answer the item. We do not encourage the rereading of a passage to answer inferential types. A common inferential question which does not require rereading is "what is the best name for the story?" This question was not used in these exercises because we use the story names in the discussion, but it should be asked often in practice exercises.

Item 3 presents a problem to the child in that the story doesn't say if Ida tasted her pie, only that she licked her lips. But the child can guess that a pie would not be tasted before the contest or it would not be whole when the judge saw it. This causes a problem. Here the child must use outside information about pie contests, yet

most items should be answered only in the context of what was in the story. The teacher could admit there may be no way to know for certain what the correct answer is, but some guy named Sabers wrote the item, and he thinks the judge was the first person to taste Ida's pie. If this were a standardized test, the one who wrote the item (or an editor) would say what the correct answer is.

The teacher should recognize the problem and capitalize on it. Maybe there are no correct answers, but the test requires a choice. So we mark a best choice. In that exercise, there is no reason to choose DK or Ingram Miller, so we choose between Ida and the judge.

The exercise *The Day Grandma Miller Fainted* (Appendix A) is similar to *Old Ida and Her Pie*. There are good reasons to use both at one sitting: (1) to encourage the child to take a dozen items without stopping, (2) to answer items based on different passages at one timing, and (3) to add plausibility to options about Miller in Ida's examples and vice versa.

Item 5 on *Grandma Miller* is identical to item 4 on *Old Ida*. Yet although the options are the same, the correct answer is different. This example should help the child see that a correct answer in one case is incorrect in another. I have found that even graduate students tend to remember answers from a pretest and therefore miss similar questions on a later test.

Items 6, 7, and 8 on *Grandma Miller* seem quite different because they are number oriented, yet they are similar. Item 6 is factual. Item 7 has no correct answer based on the story, so the child is forced to make a choice without enough information given. In item 7, we know 1, 2, and DK are not correct. We know from the story she made at least 3 pies, but she might have made more. The teacher could ask the children what is the best answer, 3 or NG, since in this case the guy who wrote the item doesn't have a keyed response. The important thing is that the child make a choice and not be too concerned that no one will ever know if the response is correct.

Item 8 is an example where NG is the correct response. It is

important that children become familiar with Not Given (NG) before taking the MAT. Many examples like *Old Ida* and *Grandma Miller* should be used before children are tested for real.

NG is a response with which the children have much trouble. Some children refer to it as "NO GOOD," a response more appropriately attached to DK. To other children NG refers to not enough information given and a few children think of it as there is a correct answer, but it is not included in the response. The MAT uses only the latter meaning for NG, which means NG is not the correct response to item 7 in *Grandma Miller*. In that case, 3 must be the number of pies she made because no other answer is more likely, and NG cannot mean more information is needed if the test is based on the MAT format.

Perhaps many children would benefit from the basic exercises in Pike's (1973) Appendix. However, the exercises provided here require those same skills and may teach them as well. An exercise like one in this report (see Appendix B) for K-1 may be useful in showing children how to eliminate the worst responses to increase the chance of a "good" guess.

Rush (1970) has written a very good workbook to introduce the language of directions. This is a linear programmed approach to enable the deaf child to follow directions, but it may be equally beneficial to the hearing child.

PART V: Tips on Discussing Test Wiseness (TW) with Children

In using practice tests with children, the following points might prove useful:

1. The learning environment is an essential aspect of TEEM's instructional program and must not be sacrificed to introduce test-taking skills. Use the learning materials already found in the classroom and introduce TW as an intellectual skill in a test center and/or at committee time.

2. Discuss with students how to attack (approach) a problem. Some testwise people read many questions before reading the passage; others read only one question before reading the passage. I prefer to read questions until I find a literal question that requires reading the passage, then I read the passage. Especially on problems interpreting graphs and maps, one should never try to understand the passage (graph and map) before answering items. There is usually much more information than is needed for answering the questions and time is wasted reading all the extra material.

3. Discuss why each wrong answer is wrong and discuss why students perform poorly on tests. The child should know what the task requires and what "traps" are set for the unsuspecting student.

4. Provide practice items that have one ridiculous answer, one possible but not related and two possible answers (but only one keyed correct). This should show students how easy it is to use partial knowledge to eliminate one option, then another, and improve one's chance at a good choice. When children cannot determine the best answer, they should employ a strategy of eliminating the worst responses and choosing

from the remaining options. This strategy can double the probability of a correct guess. An exercise to develop this skill is included in Appendix B.

5. Have students make tests when they write books or do reports. Help the students to see testing as a logical extension of the learning environment.

6. Some teachers wonder what to tell students about changing answers. The research is contradictory. It appears that when children are told not to change answers but do it anyway, their changes are for the better. However, when told to change answers, they make indiscriminate changes which lower their scores. The best advice appears to be "change only when you have a good reason to change."

7. To introduce the atmosphere of test time, some teachers have "quiet time" in the classroom every day. As one put it, "It makes no more sense to have it loud in the room all day than to have it quiet all day." Others have a quiet center, or a test center where the child works independently and quietly for increasing amounts of time. (Before you conclude I'm going overboard, reread suggestion #1 in this part.)

8. The student must increase the amount of time she/he is able to work independently on the test exercises until the times needed for the MAT are reached. Maximum times (in minutes) are as follows:

	(Grade/Mo)	Subtest	(Time)	Subtest	(Time)
Primary I	(1.5-2.4)	Math Concepts	(15)	Reading	(15)
Primary II	(2.5-3.4)	Reading	(23)	Problem Sol.	(15)
Elementary	(3.5-4.9)	Math Comp	(35)	Problem Sol.	(30)
Primer	(k.7-1.4)	All subtests require 20 minutes' teacher dictation.			

9. Before testing by the Stanford Research Institute's outside evaluation team, some teachers suggest an unknown

person give a practice test to the children so that the experience is not upsetting. Here one must be careful, because when SRI personnel read the directions to DK, some children say, "Oh boy, we can mark DK (or NG) today." Children must learn when to ignore directions (sad, isn't it?).

10. During test time (or quiet time in practice) children must be taught to wait quietly when they finish a test before time is called. On a 35-minute test many children finish as much as 10 minutes early. If these children move around the room, talk, or even say, "I'm done," they can disturb classmates who have not yet finished. Though difficult to teach, this is an easy way to increase total class performance.

11. Children need exposure to test items that are contrary to present life's experiences. An example might be an Easter story presented in December. The question, "What holiday is Mary preparing for?" requires the child to think "Easter" when the classroom looks like Christmas. In other exercises, have three options be realistic but only one be correct in terms of the story on which the item is based.

12. Read the instructions on using a test, the directions for administration, and study old tests to see what is being required of the students. Examine completed tests to see what mistakes your students make.

13. When developing practice exercises, teachers should try out exercises on each other and collaborate in the development of instructional strategies.

14. Separate answer sheets should be introduced to students long before they encounter them in the regular testing program. TEEM children are not tested with separate answer sheets at the present time.

15. Avoid creating a response bias which may lower children's scores. Do not use the same option as the right answer consistently (most teachers key "b" or the second

option and the students tend to mark that option). A good practice may be to give students an exercise where the same options (say, a star, a moon, a ball and a pumpkin) have different questions (e.g., which one is edible, which is larger, etc.) The child will then learn that what is keyed depends on the question asked.

16. Note the two formats used in the practice exercises. Some options and ovals run vertically; others run horizontally on the page. The child should see both in practice because both are used in the MAT.

17. Note also that each practice exercise does not cover all 17 points in the list in Part I. Children need all those skills, but no one exercise (or test) will include them all. The child must be exposed to different kinds of practice exercises over a long period of time. The skills cannot be taught in one setting. A one-page practice exercise on the MAT is grossly inadequate.

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APPENDIX A

OLD IDA AND HER PIE

Last year, in 1973, there was an old lady named Mrs. Ida Myers. She was at her house on Holdrege St. Old Ida baked an apple pie for the baking contest.

When the pie was finished, she put her initials I.M. on the crust. She licked her lips and said, "M-m-m good."

She went to the contest and the judge tasted her pie. He said, "Old Ida, you are the winner today because your pie is great!"

T.D., J.I., K.B., L.H., L.H.

THE DAY GRANDMA MILLER FAINTED

One rainy morning a little old woman named Grandma Miller was baking some pies. She made cherry, pumpkin and apple. The pies were for her husband Ingram to take to work for his lunch.

When the pies came out of the oven, Grandma Miller cut the initials I.M. in the crust. Then she went to the store for some Cool Whip to put on top of the pies. When Grandma Miller got back home the pies were gone! After all the hard work, she fainted.

1. When was the story *Old Ida and Her Pie* written?

⬭ 1972 ⬭ 1973 ⬭ 1974 ⬭ DK

2. Why did the judge taste Ida's pie?

⬭ He was hungry

⬭ He liked apple pie

⬭ His job was to taste pies

⬭ DK

3. Who was the first person to taste Ida's pie?

⬭ Ida Myers ⬭ the judge ⬭ Ingram Miller ⬭ DK

4. Why did Ida Myers bake a pie?

⬭ For her husband's lunch

⬭ For a baking contest

⬭ To put Cool Whip on

⬭ DK

1. Mrs. Miller baked _____
   ◯ cookies ◯ pies ◯ cake ◯ DK

2. Mrs. Miller is a _____
   ◯ grandmother ◯ judge ◯ husband ◯ DK

3. The initials I.M. were on the pies baked by _____
   ◯ Grandma Miller ◯ Ingram Miller ◯ the Judge ◯ DK

4. Why did Grandma Miller faint?
   ◯ She had worked hard
   ◯ It was hot when she walked to the store
   ◯ Her pies were gone
   ◯ DK

5. Why did Grandma Miller bake a pie?
   ◯ For her husband's lunch
   ◯ For a baking contest
   ◯ To put Cool Whip on
   ◯ DK

6. How many initials did Grandma Miller cut on each pit?
   ◯ 1 ◯ 2 ◯ 3 ◯ NG ◯ DK

7. How many pies did Grandma Miller make?
   ◯ 1 ◯ 2 ◯ 3 ◯ NG ◯ DK

8. How many initials would be cut on 3 pies?
   ◯ 1 ◯ 2 ◯ 3 ◯ NG ◯ DK

APPENDIX B

Eliminating worst response and progressing to best response

Use at teacher-mediated center

Teacher interaction (samples to involve children in discussion)

Can you tell me which one is the test figure?

Can you read the word? or can you guess the word?

What can you tell me about the test figure?

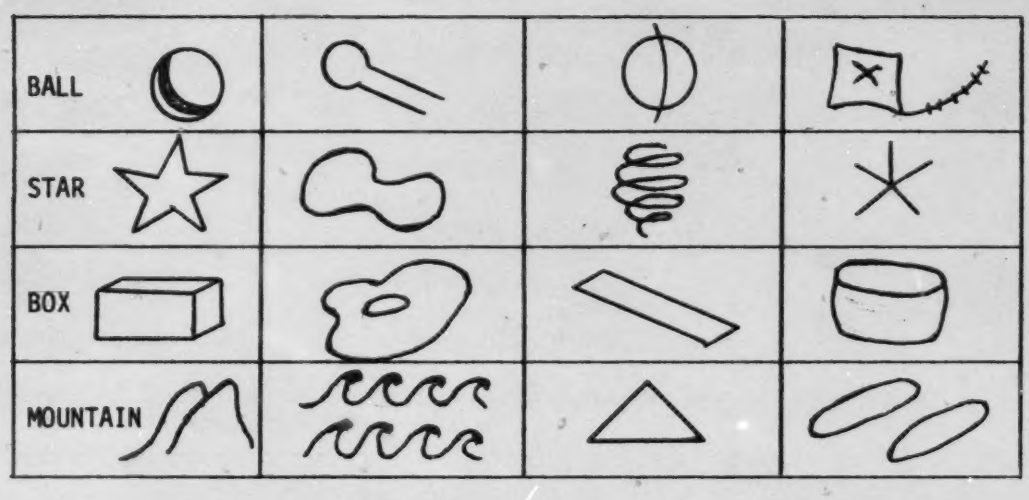
Which one is not like it?

Which one is something like it?

Which one is most like it?

Direction:

Mark the one that looks most like the sample.



NOTE: It is not necessary that the child be able to choose which is most like the test figure, e.g., the star has five points and area, and each property is found in one figure. What they should do (and they do) is say the middle one is not like a star and should not be chosen. Do not force children to accept the more popular response as correct - no one of us knows which should be keyed in that example.